

Amendments of the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the above-identified patent application:

Listing of Claims

1. (currently amended) A method for analyzing price data, representing price in a financial system that varies over time, said method comprising:
  - beginning at a first initial moment, acquiring 5 said price data during an initial first duration and determining an initial first range of said price data between a minimum value during said initial first duration and a maximum value during said initial first duration;
    - beginning at said first initial moment,
  - acquiring said price data during an initial second duration of 10 which said initial first duration is a multiple and determining an initial second range of said price data between a minimum value during said initial second duration and a maximum value during said initial second duration;
  - comparing forming a ratio of said initial first 15 range of said price data during said initial first duration to [[a]] said initial second range of said price data expected, based on Brownian motion, during said initial second duration;
  - when said first range of said price data during 20 said initial first duration ratio exceeds a square root of said range of said price data expected, based on Brownian motion, during said initial first duration multiple, concluding that said system is varying in a trend; and
  - when said first range of said price data during 25 said initial first duration ratio is less than said range square root of said price data expected, based on Brownian

~~motion, during said initial first duration multiple,~~  
concluding that said system is congesting.

2. (cancelled)

3. (currently amended) The method of claim [[2]] 1 further comprising, after said acquiring and before said comparing, applying bootstrapping techniques to said price data.

4-5. (cancelled)

6. (currently amended) The method of claim [[4]] 1 further comprising:

beginning at a subsequent initial moment,  
acquiring said price data during a subsequent first duration  
5 and determining a subsequent first range of said price data  
between a minimum value during said subsequent first duration  
and a maximum value during said subsequent first duration;

beginning at said subsequent initial moment,  
acquiring said price data during a subsequent second duration  
10 of which said subsequent first duration is said multiple and  
determining a subsequent second range of said price data  
between a minimum value during said subsequent second duration  
and a maximum value during said subsequent second duration;

computing an actual relationship a ratio of  
15 said subsequent first range to said subsequent second range;  
and

comparing said actual relationship ratio of  
said subsequent first range to said subsequent second range to  
~~an expected relationship of said subsequent first range to~~  
20 ~~said subsequent second range multiple~~, and determining from  
said comparison of said actual relationship of ~~said subsequent~~  
~~first range to said subsequent second range ratio~~ to said  
~~expected relationship of said subsequent first range to said~~  
~~subsequent second range multiple~~ how said system is varying.

7. (currently amended) The method of claim 6 further comprising repeating, at respective multiple additional subsequent initial moments:

acquiring said price data during each  
5 respective subsequent first duration;

acquiring said price data during each  
respective subsequent second duration;

computing a respective actual relationship  
ratio of each respective subsequent first range to each  
10 respective subsequent second range;

comparing each respective actual relationship  
ratio of each respective subsequent first range to each  
respective subsequent second range to a respective expected  
relationship of each respective subsequent first range to each  
15 respective subsequent second range said multiple to obtain a  
respective comparison; and  
determining from [[each]] said respective  
comparison comparisons how said system is varying.

8. (currently amended) The method of claim 7 wherein, for each of said initial moments:

~~said computing a respective actual relationship  
of each respective subsequent first range to each respective  
5 subsequent second range comprises forming a respective ratio  
of each respective initial first range to each respective  
initial second range; and~~

~~said comparing said respective actual  
relationship ratio to said respective expected relationship  
10 multiple, and said determining, comprise:~~

~~when said respective ratio exceeds a square  
root of said multiple, concluding that said system is varying  
in a trend, and~~

~~when said respective ratio is less than said  
15 square root, concluding that said system is congesting.~~

9. (previously presented) The method of claim 8 further comprising comparing respective ones of said ratio for two consecutive ones of said initial moments and:

when each of said respective ones of said ratio  
5 exceeds a square root of said multiple and a subsequent  
respective one of said ratio exceeds a prior respective one of  
said ratio, concluding that said system is varying in a trend  
and said trend is accelerating;

when each of said respective ones of said ratio  
10 exceeds said square root and a prior respective one of said  
ratio exceeds a subsequent respective one of said ratio,  
concluding that said system is varying in a trend and said  
trend is decelerating;

when each of said respective ones of said ratio  
15 is less than said square root and a prior respective one of  
said ratio exceeds a subsequent respective one of said ratio,  
concluding that said system is congesting and said congestion  
is accelerating;

when each of said respective ones of said ratio  
20 is less than said square root and a subsequent respective one  
of said ratio exceeds a prior respective one of said ratio,  
concluding that said system is congesting and said congestion  
is decelerating;

when a prior respective one of said ratio is  
25 less than said square root and a subsequent respective one of  
said ratio exceeds said square root, concluding that said  
system has moved from congestion into a trend; and

when a prior respective one of said ratio  
exceeds said square root and a subsequent respective one of  
30 said ratio is less than said square root, concluding that said  
system has moved from a trend into congestion.

10. (previously presented) The method of claim 9  
further comprising:

when said system is in a current condition of congestion or trend, comparing respective ones of said ratio for three consecutive respective ones of said initial moments separated by equal time intervals; and

5 deriving, from said comparison of said respective ones of said ratio for three consecutive respective ones of said initial moments, a prediction of when said system  
10 will move from said current condition of congestion or trend to another condition of congestion or trend.

11. (previously presented) The method of claim 10 further comprising displaying said prediction in the form of a closed curve with price data points from said three consecutive respective ones of said initial moments identified 5 on said closed curve.

12. (previously presented) The method of claim 1 further comprising displaying said initial first range of said price data and said expected range of said price data.

13. (original) The method of claim 12 wherein said displaying comprises displaying a line graph.

14. (original) The method of claim 12 wherein said displaying comprises displaying an orbital plot.

15-20. (cancelled)

21. (currently amended) The method of claim [[20]]  
7 further comprising repeating, at multiple additional sets of multiple initial moments:

5 said acquiring said price data during each respective subsequent first duration;  
said computing a respective actual range of said price data between a minimum value during each respective

subsequent first duration and a maximum value during each respective subsequent first duration;

10                 said computing a respective ratio of each  
respective subsequent first range to each respective  
subsequent second range;

15                 said comparing each respective actual range  
during ratio of each respective subsequent first duration  
range to [[a]] each respective expected subsequent second  
range during each to said multiple to obtain a respective  
subsequent first duration comparison; and

said determining from said respective  
comparisons how said system is varying; wherein:

20                 said duration differs for each said set.

22. (currently amended) Apparatus for analyzing price data, representing price in a financial system that varies over time, said apparatus comprising:

5                 means for, beginning at a first initial moment,  
acquiring said price data during an initial first duration and  
determining an initial first range of said price data between  
a minimum value during said initial first duration and a  
maximum value during said initial first duration;

10                 means for, beginning at said first initial  
moment, acquiring said price data during an initial second  
duration of which said initial first duration is a multiple  
and determining an initial second range of said price data  
between a minimum value during said initial second duration  
and a maximum value during said initial second duration;

15                 means for comparing forming a ratio of said  
initial first range of said price data during said initial  
first duration to [[a]] said initial second range of said  
price data ~~expected, based on Brownian motion,~~ during said  
initial second duration;; and

20                 means for concluding:

when said first range of said price data during  
said initial first duration ratio exceeds a square root of  
said range of said price data expected, based on Brownian  
motion, during said initial first duration multiple, that said  
25 system is varying in a trend; and

when said first range of said price data during  
said initial first duration ratio is less than said range  
square root of said price data expected, based on Brownian  
motion, during said initial first duration multiple, that said  
30 system is congesting.

23-26. (cancelled)

27. (currently amended) The apparatus of  
claim [[25]] 22 further comprising:

means for, beginning at a subsequent initial  
moment, acquiring said price data during a subsequent first  
5 duration and determining a subsequent first range of said  
price data between a minimum value during said subsequent  
first duration and a maximum value during said subsequent  
first duration;

means for, beginning at said subsequent initial  
10 moment, acquiring said price data during a subsequent second  
duration of which said subsequent first duration is said  
multiple and determining a subsequent second range of said  
price data between a minimum value during said subsequent  
second duration and a maximum value during said subsequent  
15 second duration;

means for computing an actual relationship a  
ratio of said subsequent first range to said subsequent second  
range; and

means for comparing said actual relationship  
20 ratio of said subsequent first range to said subsequent second  
range to an expected relationship of said subsequent first  
range to said subsequent second range multiple, and

determining from said comparison of said actual relationship  
of said subsequent first range to said subsequent second range  
25 ratio to said expected relationship of said subsequent first  
range to said subsequent second range multiple how said system  
is varying.

28. (currently amended) The apparatus of claim 22  
further comprising means for displaying said ratio of said  
initial first range of said price data to said initial second  
range of said price data and said expected range of said price  
5 data multiple.

29. (original) The apparatus of claim 28 wherein  
said displaying means displays a line graph.

30. (original) The apparatus of claim 28 wherein  
said displaying means displays a orbital plot.

31-34. (cancelled)

35. (currently amended) Apparatus for analyzing  
price data, representing price in a financial system that  
varies over time, said apparatus comprising:

a data feed that, beginning at a first initial  
5 moment, acquires said price data during an initial first  
duration, and beginning at said first initial moment, acquires  
said price data during an initial second duration of which  
said initial first duration is a multiple; and

a processor programmed with instructions to  
10 determine an initial first range of said price data between a  
minimum value during said initial first duration and a maximum  
value during said initial first duration and instructions to  
determine an initial second range of said price data between a  
minimum value during said initial second duration and a  
15 maximum value during said initial second duration; wherein  
said instructions comprise:

instructions to compare said first range form ratio of said price data during said initial first duration range to [[a]] said initial second range of said price data 20 expected, based on Brownian motion, during said initial first duration; and

instructions to conclude:

that said system is varying in a trend when said first range of said price data during said initial first duration ratio exceeds said range of said price data expected, 25 based on Brownian motion, during said initial first duration a square root of said multiple, and

that said system is congesting when said first range of said price data during said initial first duration 30 ratio is less than said range of said price data expected, based on Brownian motion, during said initial first duration said square root of said multiple.

36. (cancelled)

37. (currently amended) The apparatus of claim [[36]] 35 wherein said processor applies bootstrapping techniques to said acquired price data.

38-39. (cancelled)

40. (currently amended) The apparatus of claim 38 wherein:

5 said data feed, beginning at a subsequent initial moment, acquires said price data during a subsequent first duration;

said instructions comprise instructions to determine a subsequent first range of said price data between a minimum value during said subsequent first duration and a maximum value during said subsequent first duration;

10 said data feed, beginning at said subsequent initial moment, acquires said price data during a subsequent

second duration of which said subsequent first duration is said multiple;

said instructions comprise instructions to

15 determine a subsequent second range of said price data between a minimum value during said subsequent second duration and a maximum value during said subsequent second duration; and

said instructions comprise instructions to  
~~compare an actual relationship compute a ratio of said~~

20 subsequent first range to said subsequent second range, to an ~~expected relationship of said subsequent first range to said subsequent second range compare said ratio to said multiple,~~ and ~~determines to determine~~ from said comparison how said system is varying.

41. (currently amended) The apparatus of claim 35 further comprising a display that displays said ratio of said initial first range of said price data to said initial second range of said price data and said expected range of said price data multiple.

5 42. (original) The apparatus of claim 41 wherein said display displays a line graph.

43. (original) The apparatus of claim 41 wherein said display displays a orbital plot.

44-47. (cancelled)

48. (currently amended) A method for analyzing price data, representing price in a financial system that varies over time, said method comprising:

beginning at an initial moment, acquiring said

5 price data during a duration of a first length of time and determining a first range of said price data between a minimum value during said duration of said first length of time and a

maximum value during said duration of said first length of time;

10           determining a second range, ~~expected based on Brownian motion~~, of said price data during a duration of a second length of time beginning at said initial moment, said duration of said second length of time being a multiple of said duration of said first length of time, said second range being a product of said first range and a square root of said multiple; and

15           monitoring an instantaneous value of said price data during said duration of said second length of time and determining that said system is varying in a trend when said 20 instantaneous value is outside said ~~expected~~ second range.

49-51. (cancelled)

52. (currently amended) Apparatus for analyzing price data, representing price in a financial system that varies over time, said apparatus comprising:

means for, beginning at an initial moment,  
5 acquiring said price data during a duration of a first length of time and determining a first range of said data between a minimum value during said duration of said first length of time and a maximum value during said duration of said first length of time;  
10 means for determining a second range, ~~expected based on Brownian motion~~, of said price data during a duration of a second length of time beginning at said initial moment, said duration of said second length of time being a multiple of said duration of said first length of time, said second range being a product of said first range and a square root of said multiple; and

means for monitoring an instantaneous value of said price data during said duration of said second length of time and determining that said system is varying in a trend

20 when said instantaneous value is outside said ~~expected~~ second range.

53-55. (cancelled)

56. (currently amended) Apparatus for analyzing price data, representing price in a financial system that varies over time, said apparatus comprising:

a data feed for, beginning at an initial moment, acquiring said price data during a duration of a first length of time and monitoring an instantaneous value of said price data during a duration of a second length of time beginning at said initial moment; and

10 a processor programmed with instructions to: determine a first range of said price data between a minimum value during said duration of said first length of time and a maximum value during said duration of said first length of time,

15 determine a second range, ~~expected based on Brownian motion~~, of said price data during said duration of said second length of time beginning at said initial moment, ~~said duration of said second length of time being a multiple of said duration of said first length of time, said second range being a product of said first range and a square root of said multiple~~, and

20 determine that said system is varying in a trend when said instantaneous value is outside said ~~expected~~ second range.

57-59. (cancelled)

60. (withdrawn) A method for offering to subscribers analysis of data that vary over time, said method comprising:

beginning at each of a plurality of initial  
5 moments, acquiring said data during a plurality of respective  
first durations;

dividing said data into respective portions,  
each of said respective portions including data for one or  
more of said plurality of respective first durations;

10 transmitting said data to respective computers  
operated by at least some of said subscribers at the option of  
each individual subscriber;

determining at each said respective computer,  
for each respective first duration in said respective data  
15 portion a respective first range of said data between a  
minimum value during said respective first duration and a  
maximum value during said respective first duration;

determining at each said respective computer,  
for each respective first duration in said respective data  
20 portion a respective expected range of said data during said  
respective first duration;

collecting said respective determinations of  
said respective computers;

comparing each respective range of said data  
25 during each respective first duration to each respective  
expected range of said data during said respective first  
duration; and

transmitting said comparison to said  
subscribers.

61. (withdrawn) The method of claim 60 further  
comprising charging a respective subscription fee to each of  
said subscribers, said respective subscription fee being lower  
for a subscriber among said at least some of said subscribers  
5 than for a subscriber outside said at least some of said  
subscribers.

62. (withdrawn) The apparatus of claim 56  
wherein said system is a biological system and said data are  
biological data.

63. (withdrawn) The apparatus of claim 56  
wherein said system is a meteorological system and said data  
are meteorological data.

64. (withdrawn) The apparatus of claim 52  
wherein said system is a biological system and said data are  
biological data.

65. (withdrawn) The apparatus of claim 52  
wherein said system is a meteorological system and said data  
are meteorological data.

66. (withdrawn) The method of claim 48 wherein  
said system is a biological system and said data are  
biological data.

67. (withdrawn) The method of claim 48 wherein  
said system is a meteorological system and said data are  
meteorological data.

68. (withdrawn) The apparatus of claim 35  
wherein said system is a biological system and said data are  
biological data.

69. (withdrawn) The apparatus of claim 35  
wherein said system is a meteorological system and said data  
are meteorological data.

70. (withdrawn) The apparatus of claim 22  
wherein said system is a biological system and said data are  
biological data.

71. (withdrawn) The apparatus of claim 22 wherein said system is a meteorological system and said data are meteorological data.

72. (withdrawn) The method of claim 1 wherein said system is a biological system and said data are biological data.

73. (withdrawn) The method of claim 1 wherein said system is a meteorological system and said data are meteorological data.